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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,898	11/26/2003	Michael Conrad	07781.0118-00000	6296

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EXAMINER
LIN, SHEW FEN

ART UNIT	PAPER NUMBER
2166	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/721,898	CONRAD ET AL.
	Examiner	Art Unit	
	Shew-Fen Lin	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *03 January 2007*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-9* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-9* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/3/07*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

a. This action is taken to response to Request for Continued Examination filed on

    January 3, 2007.

b. Claims 1-9 are pending in this Office Action. Claims 1, 5, and 9 are independent

    claims.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on January 3, 2007 has been entered.

Response to Remarks

Applicants' remarks have been fully and carefully considered, with Examiner's responses

set forth below.

Request for Examiner Interview

The Examiner acknowledges Applicants' request for an interview. However, since the

request is embedded in the Remarks section of Applicants' reply, by the time the Examiner

reviews and examines the amended claims there is only less than a week before the next Office

Action is expected to be issued in order to meet the requirement of proper timely response. As

such, an interview is not considered as feasible. The Examiner does apologize for not being able

to grant an interview at this time as Applicants desire.

It is highly recommended that Applicants make a request for an interview by calling the

Examiner instead of embedding the request within the reply. That way, the request would receive

Examiner's attention immediately, and an interview would be scheduled in a timely manner. For

instance, once receiving this Office Action, the Applicants may call the Examiner to schedule an

interview if so desired, and the Examiner would be more than happy to grant an interview to

address applicants' comments/concerns/questions.

Response to Remarks on Claim Rejections

(A)

Applicants contend that the Examiner acknowledges that Jamil (US Patent Application

Publication 2003/0233523) fails to teach or suggest a "third state," as recited in claims 1, 5 and

9, because "show the assignment in figures 4, 7 and 9" appears to be inconsistent with the

limitation of "said identifier is not assignable to one or more data objects". The Examiner

disagrees with this assessment for the following reasons:

First, the corresponding "third state" in Jamil's invention is "the modified (M) state" as

shown in figures 4, 7 and 9a~9d.

Second, the "show the assignment" in figures 4, 7 and 9a~9d cited by the Examiner refers

to the fact that identifiers (411, 412, ..., and 430) are each "assigned" a state of ED, S or M.

Third, as a result of assignments of a state of M to identifiers (411, 412, ..., and 430), an

identifier becomes not assignable to one or more data objects. For example, figure 4 shows that

the state of identifier 414 is set to be "M," which means that identifier 414 is not assignable to,

and not accessible by, one or more data objects associated with storage elements (410, ..., 480)

other than one particular data object <u>exclusively</u> [paragraphs 0035-0040].

Thus, Jamil indeed teach the limitation of a "third state."

(B)

Applicants contend that Jamil fails to show, teach, or suggest the limitation of "one or

more data objects stored in a memory" as claimed. The Examiner disagrees with this assessment

for the following reason:

The corresponding ""one or more data objects" are the storage elements shown in figure

4, 410~480, figure 7, 710~720 and figure 9, 910~980. These storage elements are "memory"

storage elements [paragraph 0001].

Thus, Jamil clearly teaches the limitation of "one or more data objects stored in a

memory" as claimed.

(C)

Applicants contend that the Examiner's understanding of "data objects" in Jamil is

inconsistent with "replicating the one or more assigned data objects from a memory in the source

system to a memory in the target system," as claimed. The Examiner disagrees with this

assessment for the following reasons:

First, figures 9a~9c show a plurality of data objects associated with storage elements

910~980 and figure 9d shows a plurality of data objects associated with SCI storage elements

901~908.

Second, figures 10~11 show that data objects may be copied, or replicated, form MSI

storage elements 1011~1017 to the shared storage elements 1010 and 1015, and figure 12 show

that data objects may be copied, or replicated, form CSI storage elements 1211~1217 to the

shared storage elements 1210 and 1215.

Third, the direction of copying or replication may be reversed.

Thus, the MSI/SCI storage elements and the respective shared storage elements form a

pair of "source" and "target" systems, depending on the direction of copying or replication.

Therefore, Jamil clearly teaches "replicating the one or more assigned data objects from a

memory in the source system to a memory in the target system," as claimed.

(D)

Applicants contend that Jamil fails to teach the limitation of "a first state," as claimed,

because Jamil fails to teach or suggest the limitation of "said identifier is assignable to one or

more data objects stored in a memory". The Examiner disagrees with this assessment for the

following reasons:

First, the corresponding "first state" in Jamil's invention is "the shared (S) state" as

shown in figures 4, 7 and 9a~9d.

Second, the "show the assignment" in figures 4, 7 and 9a~9d cited by the Examiner refers

to the fact that identifiers (411, 412, ..., and 430) are each "assigned" a state of ED, S or M.

Third, as a result of assignments of a state S to identifiers (411, 412, ..., and 430), an

identifier becomes assignable to one or more data objects. For example, figure 4 shows that the

state of identifier 412 is set to be "S," which means that identifier 411 is assignable to, and is

accessible by, all data objects associated with storage elements (410, ..., 480) [paragraphs 0035-

0040].

Thus, Jamil indeed teach the limitation of a "first state."

(E)

Applicants contend that Jamil fails to teach the limitation of "a second state," as claimed,

because Jamil fails to teach or suggest the limitation of "said identifier is assignable to one or

more data objects stored in a memory". The Examiner disagrees with this assessment for the

following reasons:

First, the corresponding "second state" in Jamil's invention is "the Exclusive Dirty (SD)

state" as shown in figures 4, 7 and 9a~9d.

Second, the "show the assignment" in figures 4, 7 and 9a~9d cited by the Examiner refers

to the fact that identifiers (411, 412, ..., and 430) are each "assigned" a state of ED, S or M.

Third, as a result of assignments of a state ED to identifiers (411, 412, ..., and 430), an

identifier becomes not assignable to one or more data objects. For example, figure 4 shows that

the state of identifier 411 is set to be "ED," which means that identifier 411 is assignable to, and

is accessible by, one data object exclusively, and not assignable to, and is not accessible by, one

or more other data objects associated with storage elements (410, ..., 480) [paragraphs 0035-

0040].

Thus, Jamil indeed teach the limitation of a "second state."

Therefore, the Examiner's position regarding the merits of claims 1, 5 and 9, and those

claims depending from them, remains the same as stated in the previous Office Action.

Claim Rejections – 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

Claims 1-9 are rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter. They merely present an abstract idea without any practical

application that produces a useful, concrete, and tangible result.

As per claim 1, the claimed process, "creating an electronic data element...., assigning

the identifier...., assigning a state..., replicating the one or more assigned data objects... if the

sate of the identifier is the third state". The last step of the claim recites a determining step (if).

Since mere determination is not a tangible result, the claim fails to recite a useful, concrete, and

tangible result.

Regarding claims 2-4 depend from rejected claim 1, comprise the same deficiencies as

those claims directly or indirectly by dependence, and are therefore rejected on the same basis.

Claims 5-9 comprise the same deficiencies as claims 1-4 and are therefore rejected on the

same basis.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
subject matter which the applicant regards as his invention.

Claims 1, 5, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Regarding to Claims 1, 5, and 9, the phrase "may be" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed, thereby rendering the scope of the claim(s) unascertainable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Jamil et al. (US patent Application Publication).

As to claims 1, 5 and 9, Jamil et al. disclose a method of replicating data objects from a

source system to a target system [figure 6 shows copying data object 646 from a source system

(processor 604) to a target system (processor 608); But if processor 202 has modified data

portion 218, then a data request should be sent from shared storage 290, to private storage 220

for an updated copy of data portion 218, with which to satisfy the data request of processor 201

(paragraph 0034)], comprising:

creating an electronic data element [figure 4, 490; figure 7, 790; figure 9a~9d, 990 all show the

data element comprising Data, Status and P fields], comprising a first field having an identifier

[figure 4, 490; figure 7, 790; figure 9a~9d, 990 all show the data element comprising Data,

Status and P fields; the <u>Data field</u> is the corresponding identifier field] and a second field having

a state of the identifier [figure 4, 490; figure 7, 790; figure 9a~9d, 990 all show the data element

comprising Data, Status and P fields; the <u>Status field</u> is the corresponding state of the identifier],

wherein the state of the identifier may be set to:

a) a first state [the shared state, S], in which said electronic data element may be accessed

by one or more data object processing operations [according to the M (modified), E

(exclusives), S (shared) and I (invalid) protocol for maintaining coherency (paragraph 0032)]

and whereby said identifier is assignable to one or more data objects stored in a memory [figure

4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment; The corresponding ""one or more

data objects" are the storage elements shown in figure 4, 410~480, figure 7, 710~720 and figure

9, 910~980. These storage elements are "memory" storage elements (paragraph 0001); refer to

"Response to Remarks on Claim Rejections (B) and (D)"],

b) a second state [the exclusive dirty (ED) state], in which said electronic data element

may not be accessed by one or more data object processing operations [paragraphs 0035-0040]

and whereby said identifier is assignable to one or more data objects stored in a memory [figure

4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment; The corresponding ""one or more

data objects" are the storage elements shown in figure 4, 410~480, figure 7, 710~720 and figure

9, 910~980. These storage elements are "memory" storage elements (paragraph 0001); refer to

"**Response to Remarks on Claim Rejections (B) and (E)**"], or

c) a third state [the modified (M) state], in which said electronic data element may not be

accessed by one or more data object processing operations [paragraphs 0035-0040] and

whereby said identifier is not assignable to one or more data objects stored in a memory [figure

4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment; The corresponding ""one or more

data objects" are the storage elements shown in figure 4, 410~480, figure 7, 710~720 and figure

9, 910~980. These storage elements are "memory" storage elements (paragraph 0001); refer to

"**Response to Remarks on Claim Rejections (B) and (A)**"];

assigning the identifier to one or more data objects [figure 4, 490; figure 7, 790; figure

9a~9d, 990 show the assignment];

assigning a state to the identifier [figure 4, 490; figure 7, 790; figure 9a~9d, 990 show the

assignment]; and

replicating the one or more assigned data objects from a memory in the source system to

a memory in the target system if the state of the identifier is the third state [Jamil teaches the

following: First, figures 9a~9c show a plurality of data objects associated with storage elements

910~980 and figure 9d shows a plurality of data objects associated with SCI storage elements

901~908. Second, figures 10~11 show that data objects may be copied, or replicated, form MSI

storage elements 1011~1017 to the shared storage elements 1010 and 1015, and figure 12 show

that data objects may be copied, or replicated, form CSI storage elements 1211~1217 to the

shared storage elements 1210 and 1215.   Third, the direction of copying or replication may

be reversed. Thus, the MSI/SCI storage elements and the respective shared storage elements

form a pair of "source" and "target" systems, depending on the direction of copying or

·replication].

As to claims 2 and 6, Jamil discloses comprising storing the one or more assigned data

objects prior to replicating the one or more assigned data objects [modified copy 646 is received

by shared storage 690, data portion 697 is updated and reassigned a status of M (paragraph

0054)].

As to claims 3 and 7, Jamil discloses comprising setting the state of the second field of

the electronic data element to the second state [figure 4, 490; figure 7, 790; figure 9a~9d, 990

show the assignment].

As to claims 4 and 8, Jamil discloses comprising, upon a commit of the storing of the

one or more data objects, the state of the second field of the electronic data element is set to the

third state [modified copy 646 is received by shared storage 690, data portion 697 is updated and

reassigned a status of M (the modified state, i.e. third state, (paragraph 0054)]

Related Prior Arts

The following list of prior art made of record and not relied upon is considered pertinent

to applicant's disclosure.

- Heddes; Marco et al., US 7143414 B2, "Method and apparatus for locking

  multiple semaphores"

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Shew-Fen Lin whose telephone number is 571-272-2672. The

examiner can normally be reached on 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SFL
Shew-Fen Lin   Art Unit 2166
Patent Examiner   March 31, 2007

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER